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Sustainable Aquaculture for a Secure Future

Title: Survival and physiological response of *Labeo victorianus* (Pisces: Cyprinidae, Boulenger 1901) juveniles to transport stress under a salinity gradient

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Abstract: Survival and physiological response of *Labeo victorianus* juveniles under varying salinity gradients were studied during a 6 h transport. Salinity ranges were: 0, 0.25, 0.5, 1, 2, 4, 8 and 10 psu. To each transport bag, 100 juvenile *L. victorianus* (mean weight= 8.0 ± 1.1 g, stocking biomass= 16 kg m^{-3}) were transferred. Water temperature, dissolved oxygen (DO), pH, total ammonia nitrogen (TAN) and carbon dioxide (CO₂) were measured before and after transport. Plasma cortisol, blood glucose, plasma sodium, plasma chloride and blood ammonia were also determined. No juvenile mortalities occurred in salinity ranges of 1 to 4 psu. After transport, survival and parameters of physiological response in the juvenile of *L. victorianus* were significantly different among different salinity treatments ($p < 0.05$). Low survival, of less than 70% occurred in control treatments (0 psu) and in salinities 0.25, 0.5 psu and at 10 psu. Increased salinity correlated negatively with TAN and CO₂ in water after transport. Plasma cortisol in salinities of 0.5 to 8 psu, blood glucose and blood ammonia in salinities ranging from 1 to 4 psu as well as plasma sodium and plasma chloride in salinity

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ranging from 1 to 8 psu were similar before and after transport. This study recommends salinity ranges of 1 to 4 psu for minimizing the physiological effects associated with both the primary and secondary physiological response induced by transport stress in juvenile *L. victorinus*.

This abstract was excerpted from the original paper, which was in the *Aquaculture* (2011), 319(1-2): 226-231.

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